



National Airspace System Enterprise Architecture

(NASEA)

Air Traffic Organization, Directorate of NextGen and Operations Planning

(ATO-P)



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NextGen To-Be

Integrated Dictionary (AV-2)

Enterprise Level Architectures

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Version 3

Version History

VERSION	PUBLICATION DATE	PRIMARY AUTHOR(S)	DESCRIPTION OF CHANGE
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1	Nov 4, 2010	Mary Szalay George Gardner Michael Ogundoju Rajnish Gulati	Corrected misspellings and extra word in the introduction.
2	Apr 21, 2011	Booz Allen Hamilton	Added additional general definition.
3	May 2, 2011	George Gardner	Eliminated duplicate items; improved format.

Introduction

The AV-2 (Integrated Dictionary) lists the terms and acronyms used in the enterprise level NextGen architecture.

This version contains the terms used in the released 2025 architectural documents.

Definitions

Term	Type	Definition
Actor	general term	As a type of Operational Node, an Actor performs activities within the architecture.
Admin Portal	Service/Function	A special kind of portal for administration purpose, i.e. Runtime Management, or Data/Network Support Services.
Administrative Services	Service/Function	Administrative Services provide the mechanisms for establishing and implementing (Services Provisioning and Management) and for keeping the services running properly (Data/Network Support Services)
Aeronautical Information Flow	Data Path	The aeronautical information flow includes collection and distribution of information to support flight planning and collaborative decision making. This includes (1) airspace structure and status, (2) geographic structure and status, (3) service structure and status, (4) hazardous weather advisories as special NOTAMs, and (5) selected flow management decisions. It does not include the processes associated with the generation or use of this information.
Aeronautical Information Management	Service/Function	Aeronautical Information Management is the means to ensure that all stakeholders have access to critical information about system resources, procedures, constraints, and other factors impacting the use of the airspace system. It is the authoritative source for information produced by other functions and external entities.
Air Route Traffic Control Center	Operational Node, System Node	Air Route Traffic Control Centre. A facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft. There are 20 ARTCCs in the continental U.S.
Air to Ground Communications Facilities	System Node	The A/G Communications Facilities represents both satellite and radio communications.
Air Traffic Control	CATM Participant	A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic. Air traffic control (ATC) is a service provided by ground-based controllers who direct aircraft on the ground and in the air. The primary purpose of ATC systems worldwide is to separate aircraft to prevent collisions, to organize and expedite the flow of traffic, and to provide information and other support for pilots when able.[1] In some countries, ATC may also play a security or defense role (as in the United States), or be run entirely by the military (as in Brazil).
Air Traffic Control (ATC) Advisory	Air Traffic Services	Air traffic control and other facilities provide advice and information to assist pilots in the safe conduct of flight and aircraft movement. These advisories include providing weather information, traffic, and NAS status information to pilots, flight planners, and the general public.
Air Traffic Control (ATC) Separation Assurance	Air Traffic Services	The separation assurance service ensures that aircraft maintain a safe distance from other aircraft, vehicles, terrain, obstacles, and certain airspace not designated for routine air travel. Separation assurance involves the application of separation standards to ensure safety.
Air Traffic Control System Command Center	Operational Node, System Node	Air Traffic Control System Command Center (ATCSCC) - The ATCSCC oversees all air traffic control. It also manages air traffic control within centers where there are problems (bad weather, traffic overloads, inoperative runways).
Air Transportation Systems Specialist	Actor/Role	Responsible for installing, testing, troubleshooting, repairing and certifying radar, communications equipment, navigation aids, airport lighting and backup power -- everything air traffic controllers and pilots use for safe flight -- to ensure that all systems are working properly. Duties also include maintenance of airway facility systems.
Air/Ground Communications	Service/Function	Includes data and voice communications services between ground and aircraft systems.
Aircraft	System Node	The aircraft functions shown in the blue box represent the maximum configuration of functions that interact with NextGen. This is not meant to imply that all aircraft will have the maximum set of functions. The aircraft box is shaded sky blue to indicate that these are consumer elements, which could be private, commercial, or governmental elements
Aircraft ADS Processing	Function	A surveillance technique in which aircraft automatically provide, via a data link, data derived from on-board navigation and position fixing systems, including aircraft identification, four dimensional position and additional data as appropriate
Aircraft Flight Management	Function	A computer system that uses a large data base to allow routes to be preprogrammed and fed into the system by means of a data loader. The system is constantly updated with respect to position accuracy by reference to conventional navigation aids. The sophisticated program and its associated data base insures that the most appropriate aids are automatically selected during the information update cycle.

Definitions

Term	Type	Definition
Aircraft Navigation Processing	Function	Processing of airborne electronic devices which provides point-to-point guidance information or position data to the aircraft in flight or on the ground.
Aircraft Transponder Function	Function	The airborne radar beacon receiver/transmitter portion of the Air Traffic Control Radar Beacon System (ATCRBS) which automatically receives radio signals from interrogators on the ground, and selectively replies with a specific reply pulse or pulse group only to those interrogations being received on the mode to which it is set to respond.
Aircraft Weather Sensing	Function	Processing of airborne electronic devices which provides weather information to the aircraft.
Airport	Operational Node/System Node	An area of land or water used or intended to be used for the landing and takeoff of aircraft. It includes attached areas used or intended to be used for: (1) airport buildings or other airport facilities or rights of way; and (2) airport systems and equipment used for the immediate monitoring, control, takeoff and landing of aircraft. It may also include a heliport for rotorcraft. A facility which handles a high volume of Instrument Flight Rules (IFR) air traffic. It has a fix name adapted in airport adaptation with complete airport data. This airport may have one or more satellite airports associated with it.
Airport Stakeholder Operations	Function	Activities conducted by airport authorities/organizations that balance airside, landside, and terminal airport assets in order to achieve optimal use of total airport capacity. They effectively and efficiently leverage available capacity of the airport system through transformational concepts that enable the optimum and balanced utilization of airside and landside (i.e., terminal and intermodal transportation) components at national, regional, and local levels.
Airport Status and Mission Critical Notification	Service/Function	Provides web based user interface to subscribe real-time notification of airport status and mission critical information.
Airspace Management	Air Traffic Services	The airspace management service ensures the safe and efficient organization and use of the national airspace resource.
Authorized Clients, Consumers & Support Systems	System Node	Authorized Clients, Consumers, & Support Systems include those third party agents that support the development and operation of NextGen. It represents both contractor elements and other government agencies, such as NASA,
Benefit	general term	The enhancements to future NAS operations that will be delivered by the Operational Improvements
Browser	Service/Function	For accessing information in the form of web pages provided by web servers in the NAS/SWIM network or content from NAS Information Domain systems. In term, the browser displays the provided web page to the user. A web page may contain hyperlinks to other information.
Business Continuity Management	Service/Function	Providing mechanisms to do an orderly restoration of NAS services when there is a disastrous disruption of NAS facility.
Capacity Management	Service/Function	The combination of short-term and long-term capacity management
Capacity Managers	Actor/Role	Capacity Managers in Collaboration with Airspace Users and Flight Operators Design and strategically allocate airspace. Dynamically adjust the assignment of airspace to tactical separation providers. Structure routings (air and ground) where required, and flexibly allocate airspace for other purposes, including the operation of state (government) aircraft.
Certified Software Management	Service/Function	Providing a central source of approved software for use in the NAS, including the ability to ensure the integrity of the software
Clearance Delivery	Actor/Role	Clearance delivery is responsible for -Operating communications equipment, -Processing and forwarding flight plan information. - Issuing clearances and ensuring accuracy of pilot read back. -Assisting tower cab in meeting situation objectives. -Operating tower equipment. -Utilizing alphanumeric.
Client	Service/Function	An application on an end-system that accesses a remote service on another computer system, known as a server, by way of a network. A client application also provides user interfaces with display and keyboard services
Collaborations Services	Function	Collaboration Services consist of instant messaging and whiteboard.

Definitions

Term	Type	Definition
Collaborative Air Traffic Management	Solution Set	The Collaborative Air Traffic Management solution set provides capabilities to improve traffic flow management system-wide as well as at the tactical, or location-based, level. This solution set focuses on delivering services to accommodate flight operator preferences to the maximum extent possible. CATM supports a more flexible air traffic system capable of in-flight adjustment to alternate, more favorable routings and altitudes as well as the ability to shift traffic operations to match airspace and airport capacity. CATM pulls together NAS status information into a common electronic format available from multiple automation systems (e.g., weather, runway and airspace availability restrictions, etc.) to enable improved flight planning. Advanced automation will take into account operator preferences and identify routing strategies that effectively use airspace and airport capacity. CATM activities begin to set the parameters for data gathering and dissemination from all phases of flight and provide tools to enable automated decision making capabilities. Developing a common structure and status will ensure that data such as Special Activity Airspace availability can be accurate, timely and shared in the right format. Identifying the unique characteristics
Command and Control Information Flow	Data Path	The command and control information flow includes information related to the command and control operations (Trajectory Management, Separation Management, Flow Contingency Management, Short and Long Term Capacity Management, System and Services Management, and Safety Analysis). This includes both management and control of traffic and the establishment and management of system resources (airspace structures, procedures, services, staffing, network monitoring and control, maintenance information, etc.). It includes the projection of flight information (aircraft position, velocity, maneuvers, and trajectory) as part of the input to the command and control decision making process. It includes the generation of aeronautical information consisting of airspace structure and status, service structure and status, and certain geographical information (e.g., airport and runway status). It does not include the distribution of aeronautical information. It does not include the flow of weather and flight information prior to its use by the command and control operations.
Commercial Spaceport	Air Traffic Services	A spaceport is a site for launching (or receiving) spacecraft, by analogy with seaport for ships or airport for aircraft. The word spaceport has traditionally been used for sites capable of launching spacecraft into orbit around Earth or on interplanetary trajectories. However, rocket launch sites for purely sub-orbital flights are sometimes called spaceports. In recent years new and proposed sites for suborbital human flights have commonly been named spaceports. Space stations are sometimes called spaceports, in particular if intended as a base for further journeys
Communication Link	general term	The communication mechanism supporting Data Exchanges between two System Nodes
Computing Platform	Service/Function	Include a computer's architecture, operating system, programming languages and related runtime libraries or graphic user interface.
Content Discovery	Service/Function	Content Discovery is the generic capability, re-used within various information domains, to identify and access specific data/information provided by the Support and Mission Services.
Data Access	System Function	Data collected at the remote facilities is provided to NextGen Mission Services via Data Access.
Data Acquisition	Service/Function	Queries or mechanisms for passive receipt of persistent data required by the Mission Services
Data Composition	Service/Function	Manipulation of data to match the composition of Mission Services to support performance and scalability.
Data Exchange	general term	Information flowing between system nodes in architecture and the relevant attributes of that exchange such as media, quality, quantity, and the level of interoperability required.
Data Flow Management	System Function	The manipulation of data to required to match the composition of Mission Services and to support performance and scalability (data composition) and the movement of information as needed to satisfy data flow requirements of the Mission Services (data flow mechanisms)
Data Flow Mechanisms	Service/Function	Movement of information as needed to satisfy data flow requirements of the Mission Services. Examples might include processing and enriching data in bulk or unique domain driven batch processing activities.
Data Storage	Service/Function	Primarily considered as the secondary storage for computer files and relational database.
Data/Network Support Services	Function	Data/network support services consists of (1) database administrative services, (2) network support services, (3) information system security support management, (4) incident detection and response services, (5) business continuity management and (6) help desk.
Database Admin Services	Service/Function	Providing the environmental aspects for databases including recoverability, integrity, security, availability, performance, development, and testing support
Decision Point	general term	A point in the system acquisition lifecycle where a selection among a group of competing alternatives must be made.

Definitions

Term	Type	Definition
Department of Commerce (DOC) Operations	Operational Node	Related DOC operations requiring interaction with the FAA.
Department of Defense	System Node	Department of Defense provides the military forces needed to deter war and to protect the security of our country.
Department of Defense (DOD) Operations	Operational Node	Related DOD operations requiring interaction with the FAA
Department of Homeland Security	System Node	The Department of Homeland Security leads a unified national effort to secure the country and preserve our freedoms.
Department of Homeland Security (DHS) Operations	Operational Node	Related DHS operations requiring interaction with the FAA
Department of Transportation (DOT) Operations	Operational Node	Related DOT operations requiring interaction with the FAA
DTS/Access Network	Network Cloud	External to the NAS IT Infrastructure, can represent a Dedicated Telecommunications Service (DTS) or packet sized IP sub network to a remote facility. Note: The DTS/ACCESS network may or may not be necessary based on whether the remote facility is collocated with a NAS Enterprise IT Infrastructure node.
DTS/External Network	Network Cloud	External to the NAS Enterprise IT Infrastructure, can represent a Dedicated Telecommunications Service (DTS) or a packetized IP network to external users.
Emergency and Alerting	Air Traffic Services	The emergency and alerting service monitors the NAS for distress or urgent situations, evaluates the nature of the distress, and provides an appropriate response to the emergency.
Enterprise Governance	Service/Function/System Node	Enterprise Governance Provides the mechanisms for establishing how well services must work (Strategic Governance) and for ensuring that the services meet the Strategic Governance requirements (Runtime Management).
Enterprise Level Requirement	general term	A requirement that is allocated throughout the NAS Enterprise
Enterprise Services Management	Function	Enterprise services management consists of (1) SLA compliance and metrics collection, (2) performance monitoring and reporting, (3) policy enforcement and metrics collection and (4) fault monitoring and reporting.
Enterprise Wide Operations (National)	System Node	Enterprise Wide Operations consists of those functions that are national in scope.
External Boundary Protection	Service/Function	Provides appropriate mechanisms that monitors and controls communications at the external boundary of the NAS to prevent and detect malicious and other unauthorized communications.
Facility Manager	Actor/Role	Facility Manager - Coordinates and oversees the safe, secure, and environmentally sound operations and maintenance of these assets in a cost effective manner aimed at long-term preservation of the asset value. Facility managers also match staffing to traffic demand, so that management of NAS resources is dynamic and flexible to adjust for changes in the market as well as daily and seasonal traffic flow changes.
Family of Services	general term	A high-level categorization of services that are required to support a specific mission or domain.
Fault Monitoring and Reporting	Service/Function	Monitor services to determine if a service has a fault and report the fault
Federal Enterprise Operators	Operational Node	Other operational organization within the Federal Enterprise
Final Controller	Actor/role	Provides information and final approach guidance during PAR and ASR approaches utilizing radar equipment.
Flight and State Data Management	Service/Function	Flight & State Data Management is the means through which the NAS maintains and distributes all flight information, including, aircraft characteristics and capabilities, flight plans and trajectories, flight status, and clearance delivery status.
Flight Crew	Operational Node	The individual or group of individuals responsible for the control of an individual aircraft while it is moving on the surface or while airborne.
Flight Data Delivery	Actor/role	Flight Data is responsible for - Operate interphones. - Process and forward flight plan information. - Compile statistical data. - Assist tower cab in meeting situation objectives. - Observe and report weather information. - Utilize alphanumeric
Flight Information Flow	Data Path	The flight information flow includes collection, derivation, and distribution of flight plan information (such as planned trajectory or route(s)), aircraft type, aircraft equipment, performance capabilities, etc.) and flight status information (such as phase of flight, positive control vs. self-separation, emergency status, clearance status, and other flight status events). Flight information flow does not include the process of planning the flight (i.e., the provision of weather briefings and aeronautical information) nor the generation and distribution of trajectory projections and other flight status projections as part of command and control operations.

Definitions

Term	Type	Definition
Flight Operations Center	Actor/Operational Node/System Node	Any entity supporting the scheduling, planning, and management of multiple flights for an organization, including airlines, shipping corporations, major businesses, military, law enforcement, etc.
Flight operator Stakeholder Operations	Function	General aviation and private (business) consumers operation.
Flight Operators	Operational Node, System Node	The Flight Operator node represents general aviation and private (business) consumers.
Flight Planner	Actor/role	Responsible for making tactical decisions about what flights to operate and when and where they operate. May be the same as flight crew. Flight Planner is the interface with the ANSP C-ATM function to develop collaborative capacity and traffic flow management decisions and in trajectory negotiation. Operators with multiple aircraft involved in the initiative have the flexibility to adjust individual aircraft schedules and trajectories within those allocations to accommodate their own internal business concerns, both preflight and in flight.
Flight Planning	Air Traffic Services	The Flight Planning Service provides both flight plan support and flight plan data processing to support the safe and efficient use of the nation's airspace through the development and use of coordinated flight plans.
Flight Scheduler	Actor/Role	Air carrier operators with multiple aircraft involved in the initiative have the flexibility to adjust individual aircraft schedules and trajectories within those allocations to accommodate their own internal business concerns, both preflight and in flight.
Flow Constraint Notification	Service/Function	Provides web based user interface to subscribe real-time notification of significant Flow Constraint changes.
Flow Contingency Management	Service/Function	Flow Contingency Management is the means through which demand is adjusted to meet system resource capacity constraints. Such adjustments are accomplished through the establishment of temporary flow constraints, traffic management initiatives, and the shifting of flights from one flow to another, matching aircraft capabilities to the performance requirements of specific airspace segments and routes. It works in coordination with Short Term Capacity Management to resolve predicted congestion by identifying potential airspace and route configurations that could support specific flow initiatives.
Flow Contingency Managers	Actor/Role	Flow Contingency Providers in Collaboration with Flight Operators Identify potential flow problems, such as large-demand capacity imbalances, congestion, high degrees of complexity, and blocked or constrained airspace (e.g., for special use, weather), and collaborate to develop flow strategies (i.e., aggregate trajectory solutions).
FOC Stakeholder Operations	Function	Major airline carriers and commuter operator operations.
Function (system)	general term	Processes that need to be performed to achieve a desired system objective (or stakeholder need) and reside within an automation system to transform, display (Graphical User Interface) and exchange data.
Functional Domain	general term	A collection of milestone charts in the infrastructure roadmap within a NAS Domain that depict some of the systems and programs that are part of the NextGen initiative
Functional Domain Assumption	general term	A statement that is assumed to be true and from which a conclusion can be drawn that is connected to a particular Domain Roadmap
Functional Domain Diagram	general term	A particular milestone diagram within a set of NAS Infrastructure Roadmap Domain diagrams.
Functional Requirement	general term	A condition or capability needed by one or more NAS stakeholders to solve a problem or achieve an objective, that may result in the development of one or more System Functions or Services
General Aviation Operators	Actor/Role	Owners and operators of general aviation aircraft and support services.
Ground Controller	Actor/role	The ground controller is responsible for separating aircraft and vehicles operating on taxiways and other airport surface areas (not including active runways). This position is responsible for issuing pushback clearance and taxi instructions.
Help Desk	Service/Function	Providing a single point of contact to support NAS personnel in the use of NAS services and to resolve reported problems
High-Level Operational Concept Graphic (OV-1)	general term	The NAS EA High Level Operational Concept Graphic (OV-1) depicts a comprehensive vision for how the NAS is expected to operate by the year 2025
Incident Detection and Response Services	Service/Function	Monitoring, analyzing and correlating incident detection sensor data from throughout the NAS, as well as reporting and coordinating response activities when an incident does occur.

Definitions

Term	Type	Definition
Increase Arrivals / Departures at High-Density Airports	Solution Set	The High Density Airports solution set provides capabilities that improve arrival and departure capacity for multiple airports and runways in high-demand airspace. The combination of precision procedures, decision support tools, enhanced surface management and improved coordination and information sharing will allow for maximum usage of all runways and airspace at close-proximity airports. This solution set takes advantage of Performance Based Navigation and traffic flow management capabilities in the Collaborative Air Traffic Management solution set, and it builds on the capabilities of the Flexible Terminals and Airports solution set.
Increase Flexibility in the Terminal Environment	Solution Set	The Flexible Terminals and Airports solution set provides capabilities necessary to increase access to and manage the separation of aircraft in the terminal environment at and around all airports – large and small. FLEX addresses initial surface management capabilities, procedures that improve access to runways in low visibility, and new automation that will support and maximize the use of available data to enable surface trajectory-based operations. These capabilities will improve safety, efficiency and overall capacity in reduced visibility.
Increment	general term	A portion of an Operational Improvement that will deliver an incremental benefit. Associated with only one Portfolio.
Information System Security Support Infrastructure	Service/Function	Provides capabilities for managing keys and supporting access control in the NAS
Information System Security Support Management	Service/Function	Managing the Information System Security Support Infrastructure with the Technical Infrastructure Services area
Infrastructure Information Management	Air Traffic Services	Infrastructure management ensures a safe and efficient NAS through management and operation of the infrastructure and optimal use of resources.
Infrastructure Roadmap Set	general term	A specific collection of Roadmap diagrams published as a unit.
Instant Messaging	Service/Function	Allows any number of authorized users operating on different computers to collaborate with each other through textual messages delivered in real-time
Integrated Dictionary (AV-2)	general term	A spreadsheet that contains definitions for all architecture elements
Interaction Services	Service/Function	Interaction Services provide human observation and interaction using workstation elements such as display and keyboard. Purpose of Interaction service is to provide situation awareness and decision support. It often relies on information provided by the business logic of the Mission services and Support Services. Interaction service utilizes Browser and Client to access services which may be hosted remotely on Application servers and Portals on the NAS network
Interface Management	Function	Interface management consists of service discovery and service registration
Interface Requirement	general term	A requirement that defines the need for data to be exchanged across an interface.
International Air Navigation Service Provider	Actor/Role	The international organization, personnel, and automation that provide separation assurance, traffic management, infrastructure management, aviation information, navigation, landing, airspace management, or aviation assistance services for airspace users
International Air Traffic Control	System Node	International ATC represents foreign providers of aviation services that collaborate with NextGen.
International Air Traffic Control Stakeholder operations	Function	The operations of International Air Traffic Control organizations.
International Aviation	Operational Node	Foreign provided of aviation services.
International Aviation Operators	Actor/Role	Operational Air Navigation Service Providers from the international community
International Harmonization	Air Traffic Services	The FAA works to ensure international harmonization of NextGen technology, procedures and standards through continuing collaboration with international aviation organizations. These include the International Civil Aviation Organization (ICAO), other civil aviation authorities (CAAs), the Civil Air Navigation Services Organization (CANSO), the European Commission, etc.. The FAA serves as a member to the ICAO Council as well as virtually every commission, committee, panel 6 and study group to promote harmonization, interoperability and seamlessness. The U.S. also participates on Planning and Implementation Regional Groups (PIRGs) and ICAO Technical Panels and Study Teams. The U.S. also participates with other multi-government regional coordination bodies such as the SESAR Joint Undertaking (SESAR/JU), EUROCONTROL, and the Single European Sky Council as well as with globally recognized standards bodies such as RTCA and Eurocae.
Investment	general term	Represents a Capital Investment Plan line item

Definitions

Term	Type	Definition
Local Controller	Actor/role	The local controller has primary responsibility for operations conducted on the active runway and must control the use of those runways. This includes positive coordination with Ground Controller, monitor and control of vehicles using/crossing runways.
Long Term Capacity Management	Service/Function	Long Term Capacity Management is the means through which new system capacity is generated or developed. It provides the tools that support the management of capacity during operations, including airspace configurations, pre-defined routes and fixes, procedures, airport infrastructure improvements, and staffing structures.
Mediation	Service/Function	Provides the capability for various types of mediation, such as data format transformation, between message senders and receivers
Message Routing	Service/Function	Provides support for message routing between service providers and service consumers
Messaging Services	Function	Messaging Services consist of (1) published/subscribe, (2) request/response, (3) message routing and (4) mediation.
Military	System Node	The Military node represents the military as a consumer of NextGen services.
Military Liaison	Actor/Role	The military flight operator that negotiate with the ANSP to reserve airspace for a set of operations.
Military Partner	System Node	This node represents military ATC functions that are integrated with NextGen.
Military Stakeholder Operations	Function	Military ATC operations.
Mission Services	Service/Function	The application services which provide mission business logic. They are residing in the NAS systems that support air traffic operations. Mission Service subscribes information provided by Support Services such as single authoritative source weather information or Flight and State Data.
NAS Enterprise IT Infrastructure	Network Cloud	The NAS Enterprise IT Infrastructure represents a Service Oriented Architecture (SOA) running on top of a robust NAS IP network as it evolves in the future. Internet Protocol Version 6 (IPv6) refers to the network layer.
NAS Enterprise Security Gateway.	Network Device	The NAS Enterprise Security Gateway refers to the enterprise security architecture for boundary protection, security controls, etc.
National Weather Service	System Node	Official US weather, marine, fire and aviation forecasts, warnings, meteorological products, climate forecasts and information about meteorology.
National Weather Service (NWS) Operations	Operational Node	Related DOC operations requiring interaction with the FAA which provide and receive weather data
National Weather Service Stakeholder Operations	Function	NWS provides and receives raw weather data. It also interacts with the NextGen Weather Information Management function to develop aviation-related products.
Navigation Facilities	System Node	The Navigation Facilities box represents all three categories of facilities – ground-based electronic reference systems (VOR, landing systems, etc.), visual guidance systems (landing lights), and satellite navigation support systems (WAAS, LAAS).
Navigation Support	Service/Function	Navigation Support includes functions performed by both ground-based and space-based navigation and landing systems that provide electronic reference signals to assist an aircraft in determining its position relative to a navigation fix or runway. It also includes the provision of visual reference to flight crews.
Need Line	general term	Expresses the requirement by one operational node for services or information from another operational node
Net Centric Operations	Service Grouping	The application of network methods and technologies to improve or transform an operation or process. It focuses on improving the exchange of information throughout the National Airspace System (NAS), and is often referred to as "the heart of NextGen." There are two key components of Net-Centric Operations: a Net-Centric Infrastructure and Net-Centric Information Services. The infrastructure is the framework for sharing information, while the services direct that information to the users who need it.
Network Support Services	Service/Function	Providing maintenance of computer hardware and software that comprises a computer network, including deployment, configuration, maintenance, and monitoring
NextGen External Operators	Actor/Role	Operations involved with managing and ensuring the quality of weather information and its translation to weather impacts.
NextGen Facility	Operational Node	A NextGen facility will be facilities that integrate operational domains (e.g., tower control, classic airspace, and trajectory based operations airspace). These NextGen facilities could also provide an economical solution for high altitude airspace restructuring that would be needed after implementing the Big Airspace concept.
NextGen Facility Operators	Actor/Role	An operator for operations or services at a NextGen Facility for the purpose of Communications, Navigation, Surveillance, Weather.

Definitions

Term	Type	Definition
NSIP Segment	general term	A defined portion of the NextGen Segment Implementation Plan. The FAA's internal management plan to implement the operational improvements in specific timeframes.
Oceanic ARTCC	Operational Node	An FAA ARTCC with responsibility for oceanic airspace. See also ARTCC.
On-Demand NAS Portal	Service/Function	Provides a secure unified access point, often in the form of a web-based user interface, and is designed to aggregate and personalize information through application-specific port lets
Operational Activity	general term	A description of tasks /activities that are part of one or more NAS processes.
Operational Improvement	general term	A discrete strategic activity for service delivery to improve NAS operations and move towards the Next Generation Air Transportation System (NextGen) vision.
Operational Information Exchange Matrix (OV-3)	general term	A matrix of the information exchanges within the NAS environment. It corresponds with the OV-2 and OV-5 to describe who exchanges what information with whom, why the information is necessary, and in what manner the information is exchanged.
Operational Node	general term	A logical or physical entity (a worker, system, facility, or subsystem), operating in an environment that produces, consumes, or processes data, and whose role is to interact in some manner with one or more elements of the enterprise.
Operational Node Connectivity Diagram (OV-2)	general term	Provides a holistic and detailed view of the operational nodes (Roles, Facilities, Actors, Organizations) and needlines across the NAS that indicate a requirement to exchange information. This includes all of the relevant operational nodes and roles necessary to perform the NAS activities identified in the EA activity diagrams (OV-5) along with their associated information exchanges. The CY2011 EA also includes the targeted Far Term perspective that focuses on the Information Services segment of the architecture
Operational Requirement	general term	A condition or capability needed by one or more NAS stakeholders to solve a problem or achieve an objective that is associated with operational activities.
Operational Scenario	general term	Description of a generic process in the NAS, using a specific situation/circumstance. May also be known as a use case.
Optical Backbone	Network Device	The high speed fiber optic circuits that connect the major nodes of a data network.
Organization	general term	A business or administrative structure united and created to achieve a mission or particular end.
Other Government Agencies	Operational Node/System Node	Other government agencies include any agency that interacts with the National Airspace System (NAS), such as the Department of Defense (DOD), the Department of Homeland Security (DHS) and the National Weather Service (NWS).
Other Government Agencies Stakeholder Operations	Function	The activities of other government agencies.
Overview and Summary Information (AV-1)	general term	The executive-level summary of the National Airspace System (NAS) Enterprise Architecture (NAS EA) that describes, in a text document, the scope, vision, context, and stakeholders for the architecture.
Performance Metric	general term	The set of measures that may be applied to objects (system, system function, service, requirement) in order to evaluate and improve their efficiency and effectiveness.
Performance Monitoring and Reporting	Service/Function	Monitors services to determine level of performance including but not limited to throughput and response time. It also generates threshold based alerts and reports performance based metrics.
Pilot	Actor/role	The individual or group of individuals responsible for the control of an individual aircraft while it is moving on the surface or while airborne.
Policy Enforcement and Metrics Collection	Service/Function	Enforces policies set by the governance process including SLA compliance and message QoS compliance
Portfolio	general term	A set of capabilities that share a common benefits pool within a common operational space, and often have more than one FAA organization responsible for implementing those capabilities
Program	general term	A group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may include elements of related work outside the scope of the discrete projects in the program.
Program Funding	general term	The allocation of funds that a program receives for its implementation
Project	general term	A temporary endeavor undertaken to create a unique product, service, or result.
Publish/Subscribe	Service/Function	Provides support for publish/subscribe message exchange pattern
Ramp	Operational Node	A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.

Definitions

Term	Type	Definition
Ramp Controller	Actor/role	Responsible for non-movement areas of the Aerodrome
Reduce Weather Impact	Solution Set	The Reduce Weather Impact solution set supports the integration of a broad range of weather information into air traffic decision making. In the mid-term, new operational improvements and technologies will mitigate the effects of weather resulting in safer and more efficient and predictable day-to-day NAS operations.
Request/Response	Service/Function	Provides support for request/response message exchange pattern
Requirement	general term	A condition or capability needed by one or more NAS stakeholders to solve a problem or achieve an objective.
Run-time and Operations Governance	Service/Function	Creates and executes governance process including procedures for runtime management and operations
Run-time Management	Function	Run-time management consists of (1) service choreography, (2) security policy management, (3) service policy management, (4) service SLA management and (5) services scorecard generation and publication.
Safety Management	Service/Function	Safety Management Service is the means through which safety information is collected, derived from other system data, and analyzed to determine relative risk and appropriate means for mitigation.
Sector Resource Managers	Actor/Role	Sector Resource Managers - The en route ATC planner who manages staffing and configuration within an Area of Specialization (AOS), or Area, and informs Center Traffic Management Coordinators of any condition in the Area that could negatively impact the facility's ability to implement TFM-assigned flight specific changes
Security Policy Enforcement and Access Management	Service/Function	Provides management of access to data resources that are based on the requesting entity's identity, organizational role, or other considerations such as transaction state or application. Provides mechanisms to enforce security policies based on rules set by the NAS SOA Governance body.
Security Policy Management	Service/Function	Provides management and storing of the rules that allow and limit access privileges to NAS data resources.
Security Service	Function	Security services consist of (1) security policy enforcement and access management and (2) service security management.
Sensor Systems	Service/Function	Includes systems that convert measurements of physical phenomena into data representation. Examples are radar sensors and atmospheric sensors.
Separation Management	Service/Function	Separation Management is the tactical response to violations or projected violations of separation standards. It generates tactical variations of flight trajectories to resolve projected conflicts between aircraft, and between an aircraft and an aviation hazard, such as obstacles to flight, restricted airspace, or severe weather.
Separation Managers	Actor/Role	Separation Managers (May Be Flight Crew Depending on the Airspace and the Operation) Eliminate residual conflicts left by the three strategic functions of TBO. Automation detects the conflicts and provides the resolution.
Service	general term	Unit(s) of logic that exist autonomously to support operations, where the access is provided using a prescribed interface and is exercised consistent with constraints and policies as specified by the service description.
Service Adaptation	Service/Function	Adaptation or transformation required to enable legacy services or applications to use SOA Core Services to exchange information with other services. Service Adaptation allows legacy applications to achieve service orientation without change to the legacy application logic.
Service Choreography	Service/Function	Establishes community interchange patterns for collaborative purposes by services from different provider entities that are not centrally managed.
Service Delivery Nodes (Local)	System Node	Service Delivery Nodes will be facilities that integrate operational domains (e.g., tower control, classic airspace, and trajectory based operations airspace). These facilities could also provide an economical solution for high altitude airspace restructuring that would be needed after implementing the Big Airspace concept.
Service Design Governance	Service/Function	Creates and executes governance process including procedures for the design, implementation, test ,and run-time management of the NAS SOA Services
Service Development, Integration and Test	Service/Function	Prototyping, Developmental Testing and Operational Testing for service qualities including reliability, availability ,and SLA policies before deployment
Service Diagnostics	Service/Function	Collects fault and performance data to perform diagnostics of services in NAS operation
Service Discovery	Service/Function	Provides the capability for service consumers to be able to easily find information about services including the service access point
Service Orchestration	Service/Function	Establishes service interaction patterns for combined, centrally managed services.

Definitions

Term	Type	Definition
Service Policy Management	Service/Function	Storing, categorizing, updating, and distributing policies to control monitoring of faults and quality of services
Service Registration	Service/Function	Provide Service Registry for the providers to register service description including service SLA and QoS characteristics, and meta-data for Service Interfaces.
Service Scorecard Generation and Production	Service/Function	Collect information from Service Enforcement Point to review performance, capacity, reliability and availability of NAS systems and services and verify Service Policy and SLA are fulfilled.
Service Security Monitoring	Service/Function	Provides monitoring of NAS services for any systems events that may indicate security breach or fraudulent use of NAS system resources
Service SLA Management	Service/Function	Storing, updating, and distributing SLA to control monitoring of faults and quality of services
Services Provisioning	Service/Function	Perform deployment, configuration and maintenance in the lifecycle of certified NAS services
Services Provisioning Management	Function	Services provisioning management consists of (1) service diagnostics, (2) services development, integration and testing (3) services provisioning and (4) certified software management.
Short Term Capacity Management	Service/Function	Short Term Capacity Management is the means through which strategic planning is performed for applying available assets to adjust system capacity to meet the demand. It involves the assessment of demand within an operational timeframe, and the allocation of available resources to provide sufficient capacity to meet that demand. It also predicts congestion where capacity cannot be increased sufficiently to meet demand. It works in coordination with Flow Contingency Management to resolve predicted congestion by adjusting airspace and route configurations to match the needs of specific flow initiatives.
SLA Compliance and Metrics Collection	Service/Function	Monitors services to determine if factors specified in Service Level Agreements (SLAs) are out of the permitted range, including but not limited to resource utilization, fault behaviors, and performance metrics
SOA Core Services	Service/Function/System Node	SOA Core Services layer primarily provides interfaces and interoperability to support the upper layers. The prime components are messaging services, collaboration services, security services and Enterprise Service Management.
SOA Governance Service Desk Support	Service/Function	Provides a single point of contact to meet the needs and satisfy objectives of both SOA implementers and SOA governance management
SOA Support Platforms	Service/Function	Provides an execution environment for operating systems including a Virtual Machine, common language runtime API, and runtime class library for application and Web Services (Java, Microsoft .Net.,etc..)
Strategic Governance	System Function	Strategic governance is composed of strategic SOA governance, service design governance, runtime and operations governance and SOA governance service desk support
Strategic SOA Governance	Service/Function	Includes strategic planning, funding, budgeting, portfolio management, enterprise architecture, and business and technology alignment
Support Activity	general term	A NAS initiative that supports the development of Systems and System functions.
Support Services	Service/Function/Operational Node/System Node	Data Logic supporting Mission Services. The logic exists at two levels: Data access to the persistent data required by the Mission Services and management of data flow to and between Mission Services. This logic is available to the mission applications as services and may be constructed with domain model semantics.
Surveillance Facilities	System Node	The Surveillance Facilities box represents all three types of facilities – ground-based radar systems (primary and secondary), ADS-B transceivers, and ADS-C satellite transceivers (for oceanic operations).
Surveillance Information Flow	Data Path	The surveillance information flow includes information about current aircraft movement. This includes acquisition of the aircraft's 3-D position, velocity, and maneuver information in real-time and the extrapolation of similar information when not available through acquisition. In the NextGen time frame, it will also include the derivation of an official integrated surveillance situation view
Surveillance Information Management	Service/Function	Surveillance Information Management is the means for processing raw surveillance information and transforming it into an integrated, comprehensive, and authoritative source for all consumers and service providers. The processing includes correlating surveillance information with flight data to provide continuous identification and tracking of each flight. It also involves the derivation of information from the surveillance data, such as velocity and intent.
System	general term	Automation that contains functionality required to support an operational activity or procedure for a specific mission or domain. It may receive or transmit data with one or more external systems and services.

Definitions

Term	Type	Definition
System and Services Analysis	Service/Function	System & Services Analysis includes both real-time and off-line analysis of information gathered throughout the system and from external entities. It is used to assess system performance and to support investigations of accidents, incidents, and criminal activity. It also includes the recording of operational information (including voice communications) for analysis and archival purposes.
System and Services Management	Service/Function	System & Services Management represents the enterprise-wide maintenance and system management function. It monitors the health of all system elements in conjunction with Remote System & Services Management, and responds to failures and degradations of service, and provides logistics and preventative maintenance services to minimize system outages and degradation of services. It also monitors the health of external entities critical to the success of collaborative operations.
System Function	general term	Processes that need to be performed to achieve a desired system objective (or stakeholder need) and reside within an automation system to transform, display (Graphical User Interface) and exchange data.
System Interface	general term	A description of the physical connection between two Systems and other technical descriptive data.
System Node	general term	A physical location or logical grouping of systems, families of services, and services.
Systems Functionality Description (SV-4)	general term	Used to specify the functionality of resources in the architecture (in this case, services). The SV-4 is the behavioral counterpart to the SV-1. The SV-4 is the Systems Viewpoint model counterpart to the OV-5b Activity Model of the Operational Viewpoint.
Systems Communications Description (SV-2)	general term	Specifies the System Resource Flows between Systems and may also list the protocol stacks used in connections. This model is used to give a precise specification of a connection between Systems. This may be an existing connection, or a specification for a connection that is to be made.
Systems Interface Description (SV-1)	general term	A diagram depicting the system nodes, system entities and their interfaces, within and between nodes.
Technical Infrastructure Services	Service/Function	This layer provides the hardware and software infrastructure to support day to day operations for all NAS services which are on the upper layers. Some components are the run-time computing platforms, data storage systems, network infrastructure, and enclave boundary and transport-level protection elements.
Technical Performance Requirement	general term	A description of a technical standards and performance metrics that should be employed by services or system functions.
Technical Standard	general term	A formal document/presentation that establishes uniform engineering or technical criteria, methods, processes and practices.
Technical Standards Profile (TV-1) and Technical Standards Forecast (TV-2)	general term	The Technical Standards Profile and Forecast contains various systems standards and rules that implement and sometimes constrain the choices that can be made in the design and implementation of architecture. This document also contains expected changes in technology-related standards and conventions. The forecast for evolutionary changes in the standards should be correlated against the future state of the NAS (2025).
Terminal Radar Approach Control	Operational Node	A terminal ATC facility that uses radar and nonradar capabilities to provide approach control services to aircraft arriving, departing, or transiting airspace controlled by the facility. A Terminal Radar Approach Control (or TRACON) is an air traffic control facility usually located within the vicinity of a large airport.
Terrestrial Network Communication	Service/Function	The NAS IP network primarily used for data communication between NAS applications, web servers, computer platforms and Data Storage.
Third Party Provider Stakeholder Operations	Function	The activities of 3rd party providers.
Third Party Providers	Actor/Role	Third Party Providers provide a commercial outlet for NextGen information.
Tower	Operational Node	A terminal facility that uses air/ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity of an airport or on the movement area. Authorizes aircraft to land or takeoff at the airport controlled by the tower or to transit the Class D airspace area regardless of flight plan or weather conditions (IFR or VFR). A tower may also provide approach control services (radar or nonradar).
Traffic Management	CATM Participant	The management of airspace using capacity management and traffic flow management.

Definitions

Term	Type	Definition
Traffic Management (TM)-Strategic Flow	Air Traffic Services	The strategic flow service provides for orderly flow of air traffic from a system perspective. NAS demand and capacity is analyzed and balanced to minimize delays, avoid congestion, and maximize overall NAS throughput, flexibility, and predictability.
Traffic Management (TM)-Synchronization	Air Traffic Services	Traffic synchronization supports expeditious flight for the large number of aircraft using the NAS during any given period of time. NAS processes operate to maximize efficiency and capacity in response to weather, NAS infrastructure, runway availability or other conditions.
Training Support	Function	Supports training of NAS personnel to understand the characteristics and functionality of NAS application services
Trajectory Management	Service/Function	Trajectory Management is the means through which 4-D trajectories are generated, assessed, and modified for use in trajectory-based operations. It supports the implementation of flow management strategies by managing changes to trajectories required by localized changes in capacity and demand.
Trajectory Managers	Actor/Role	Trajectory Managers in Collaboration with Flight Operators Predict individual flight contention within a flow for resources, identify complex future conflicts (i.e., strategic SM), and coordinate individual trajectory resolutions. This is focused on near-tactical management of individual trajectories within a flow.
Trajectory-Based Operations	Solution Set	The Trajectory Based Operations solution set focuses primarily on high-altitude cruise operations in en route airspace. TBO will provide the capabilities, decision-support tools and automation to manage aircraft movement by trajectory. This shift from clearance-based to trajectory-based air traffic control will enable aircraft to fly negotiated flight paths necessary for full performance based navigation, taking both operator preferences and optimal airspace system performance into consideration.
Transform Facilities	Air Traffic Services	The Transform Facilities solution set focuses on capabilities that enable a network of integrated facilities designed to support the delivery of safer and more efficient operations system-wide. It enables a facilities infrastructure that supports NextGen capabilities as they are integrated into the current system and as they mature over time. Business continuity is built into the system and provides for a more resilient infrastructure, better contingency operations and a higher degree of service. FAC includes multi-discipline laboratories and test beds to support NextGen requirements development and risk-mitigation efforts.
Unmanned Aircraft System	System Node	UAS is the unmanned aircraft system and its associated components and persons required for operation.
Weather Coordinators	Actor/Role	Wx Coordinator position is within the Traffic Management Unit (TMU) and gets their weather information from the CWSU.
Weather Facilities	System Node	The Weather Facilities box represents four types of facilities – surface observation systems, airborne weather sensor collection systems, weather radar systems, and weather satellite receivers.
Weather Information Flow	Data Path	The weather information flow includes the acquisition of weather parameter information in real-time and the extrapolation of similar information when not available through acquisition. It includes the derivation of projected parameters, weather conditions (current and projected), tailored products, and, in the NextGen time frame, an official integrated weather situation view to be used by all consumers. It includes weather sources, weather processing, and distribution. The weather flow does not include dissemination of the weather that is part of the aeronautical information flow (i.e., NOTAMs).
Weather Information Management	Service/Function	Weather Information Management is the means for processing raw weather information and transforming it into an integrated, comprehensive, and authoritative source for all consumers and service providers. The processing includes interpolation between sources to provide complete lateral and vertical coverage, and probabilistic extrapolation from current conditions into the future so as to provide a 4-D representation of the weather situation that can be used for decision making related to the current traffic situation and for planning to accommodate projected demand. It also includes the derivation of products and data that can be applied to decision support tools, support trajectory-based operations, and provide advisories of hazardous weather to consumers.
Weather Notification	Service/Function	Provides web based user interface to subscribe real-time notification of significant weather condition changes.
Weather Operators	Actor/Role	Operations involved with delivering and interpreting weather for operational use in aviation
Weather Specialist	Actor/Role	The Weather Unit at the command center consists of Weather Specialists who monitor national weather on a continuous basis.
Weather Vendor Stakeholder Operations	Function	The activities of weather product vendors.

Definitions

Term	Type	Definition
Weather Vendors	Actor/Role/Operational Node/System Node	Entities that provide and receive weather information to/from NextGen Third Party Providers. NextGen Third Party Providers represent a commercial outlet for NextGen information.
Web Application	Service/Function	An application that is accessed via browser or client over a network such as the NAS network. It is also a computer software application that is coded in a browser-supported language (such as HTML, Java Script, Java, etc.) and reliant on a common web browser to render the application executable.
Web Application Hosting Capability	Service/Function	Provides hosting functions and platforms that can be used to deploy Interaction Services
White Board	Service/Function	Allows session users to view common files and provide the ability for users to collectively draw, annotate and mark “on top” of the common files view.

Acronyms

Acronym	Term	Term Type
A/G	Air to Ground Communications Facilities	System Node
ADS-P	Aircraft ADS Processing	Function
AIM	Aeronautical Information Flow	Data Path
ARTCC	Air Route Traffic Control Center	Operational Node, System Node
ATC	International Air Traffic Control	System Node
ATCSCC	Air Traffic Control System Command Center	Operational Node, System Node
AV-1	Overview and Summary Information (AV-1)	general term
AV-2	Integrated Dictionary (AV-2)	general term
CATM	Collaborative Air Traffic Management	Solution Set
F&SDM	Flight and State Data Management	Service/Function
FCM	Flow Contingency Management	Service/Function
FOC	Flight Operations Center	Actor/Operational Node/System Node
HD	Increase Arrivals / Departures at High-Density Airports	Solution Set
LTCM	Long Term Capacity Management	Service/Function
Oceanic ARTCC	Oceanic ARTCC	Operational Node
OV-1	High-Level Operational Concept Graphic (OV-1)	general term
OV-2	Operational Node Connectivity Diagram (OV-2)	general term
OV-3	Operational Information Exchange Matrix (OV-3)	general term
RWI	Reduce Weather Impact	Solution Set
SM	Separation Management	Service/Function
STCM	Short Term Capacity Management	Service/Function
SV-1	Systems Interface Description (SV-1)	general term
SV-2	Systems Communications Description (SV-2)	general term
SV-4	Systems Functionality Description (SV-4)	general term
TBO	Trajectory-Based Operations	Solution Set
TRACON	Terminal Radar Approach Control	Operational Node
TV-1/2	Technical Standards Profile (TV-1) and Technical Standards Forecast (TV-2)	general term
UAS	Unmanned Aircraft System	System Node
WIM	Weather Information Management	Service/Function